

PIMA

EMPLOYMENT GROWTH 2001-03

1.6

2001-06

2.5

STANFORD 9 2002

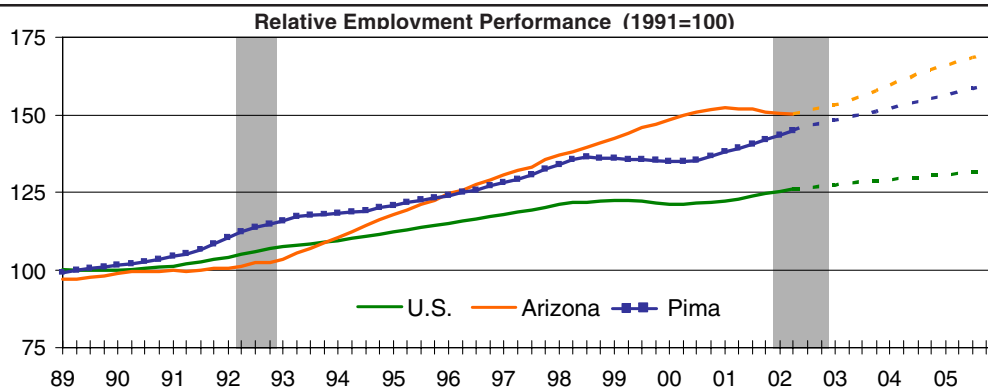
Language 41
Math 60
Reading 43

EDUCATIONAL ATTAINMENT 2000

26.7%

POVERTY RATE

14.7%



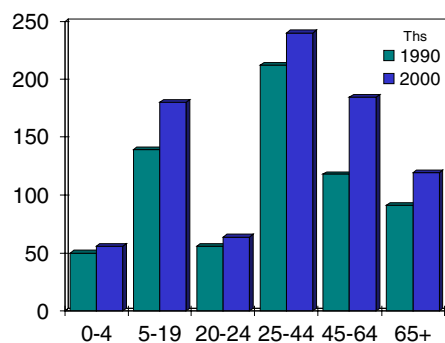
1995	1996	1997	1998	1999	2000	2001	Indicators	2002	2003	2004	2005	2006
15.71	16.09	16.45	17.25	18.47	19.87	20.16	Gross Product, C\$B	20.60	21.55	22.56	23.55	24.69
1.8	2.4	2.2	4.9	7.1	7.6	1.4	% Change	2.2	4.6	4.7	4.4	4.8
302.7	307.2	315.4	324.1	336.4	350.0	350.3	Total Employment (000)	349.8	361.8	376.3	387.4	398.6
3.9	1.5	2.7	2.8	3.8	4.0	0.1	% Change	-0.2	3.4	4.0	2.9	2.9
3.3	3.8	3.3	2.7	3.1	2.8	3.5	Unemployment Rate	4.9	4.6	4.5	4.4	4.3
5.9	6.4	5.2	7.7	5.1	8.0	3.9	Personal Income Growth	3.4	6.2	7.5	6.6	6.5
768.2	783.7	798.5	813.4	828.9	848.6	863.0	Population (000)	875.1	891.3	910.8	929.6	947.4
4,934	5,073	5,577	6,512	7,234	6,816	6,298	Single-Family Permits	6,255	6,574	6,591	6,531	6,544
2,341	624	1,225	1,028	1,500	963	1,174	Multifamily Permits	844	1,329	1,408	1,481	1,488
100.6	105.2	107.0	112.2	117.1	120.8	127.2	Existing Home Price (\$Ths)	133.6	138.4	147.6	152.4	160.8
3,023	3,615	3,866	6,670	5,611	4,811	9,208	Mortgage Originations (\$Mil)	6,734	5,667	6,144	6,292	6,968
15.3	8.3	7.4	7.2	9.1	9.4	9.6	Net Migration (000)	0.9	2.6	4.7	5.9	6.5
2,161	2,879	3,787	4,072	3,666	3,255	3,914	Personal Bankruptcies	5,181.0	5,063.4	4,831.7	4,980.1	4,982.9

INDUSTRY OPPORTUNITIES

Opportunities for economic development include:

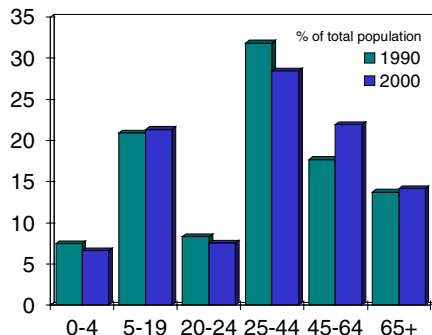
- Software
- Healthcare/Biotech
- Communications services
- High tech instruments
- Engineering, research and testing
- Defense/aerospace/avionics
- Tourism

POPULATION BY COHORT



Source: Census Bureau

POPULATION DISTRIBUTION



Source: Census Bureau

ANALYSIS

Recent Performance. Economic conditions in Pima County are stabilizing although economic recovery remains tenuous. Nearly every industry group, save government and services, has held steady in recent months. Government, the anchor of the local economy, and services are providing moderate employment gains for the region. The jobless rate has fallen from a June 2002 peak. Credit quality is deteriorating, but remains above the state average.

Defense. Pima has a strong concentration of defense and aerospace companies which are a significant part of local economic activity, although the industry has been weak over the past few years. Several local defense employers, including Raytheon and Bombardier, have laid off employees in local operations, despite a surge in new orders and defense spending at the federal level.

Recent difficulties notwithstanding, over the long term PIM's significant defense industry will benefit considerably from the latest defense budget, which includes the largest increase in defense procurement spending in a decade. The proposed \$67 billion in defense procurement spending is expected to be used to acquire cutting edge reconnaissance systems, communication and imaging devices, and guidance systems, all of which fall within the purview of PIM defense contractors.

Real estate. Housing supply in the PIM market is slowly building, despite moderating permit issuance. PIM currently has over two months of excess housing supply by Economy.com's estimates, which is close to average for the nation, but below the high reached during the last recession. As such, there is little imbalance in the PIM housing market. Home price appreciation in PIM is rising in tandem with the state average, although appreciation has lagged the national average over the past two years.

Housing activity is expected to moderate further in the near term, adjusting for this excess supply. Concurrently, house price appreciation and home sales will also temper next year. With

an above-average economic outlook and strong population growth expected over the forecast horizon, PIM's housing market will remain an above-average performer over the long term.

Intellectual capital. One of the near-term downside risks facing PIM is a potential second round of cuts in the university's budget, thanks to continuing state fiscal woes. The state's universities, built around the University of Arizona in PIM, have faced funding constraints for over a decade, which is thwarting the university's ability to attract and retain talented students and faculty. As the region attempts to parlay its reputation as a center for high-tech, specifically biotech innovation, the strength of this intellectual capital is now more important than ever.

Although the university ranks 12th in the nation in terms of total federal research dollars received in 1999, it is still hounded by low retention rates, below-average faculty salaries, and weak technology transfer revenues from commercializing university research. The university risks falling behind peer universities across the nation in the race for talent, which could compromise the region's competitiveness and innovative capacity going forward. This is especially important in light of recent attempts to boost biotech growth in the county.

Near term, Pima County will emerge from its economic slump as tourism and technology manufacturing picks up in congruence with national demand. Over time, PIM is well positioned to benefit from future growth in high tech, high-value added manufacturing industries such as electronics, biotechnology, avionics and defense. Exports will also contribute to further growth. Expansion of high value-added industries will be helped by fruitful interaction between entrepreneurs and the disseminated knowledge from local universities. **Longer term,** PIM will be among the top-performing metropolitan areas in the nation.

Rakesh Shankar
December 2002

EMPLOYMENT & INDUSTRY

TOP EMPLOYERS

University of Arizona	11,606
Raytheon Aircraft Company	10,400
Davis-Monthan Air Force Base	9,200
Wal-Mart Stores, Inc.	3,800
Carondelet Health Network	3,328
Tohono O'odham Nation	2,700
University Medical Center	2,415
TMC Healthcare	2,395
Pima County Community College	2,238
Bombardier Aerospace	2,154
ASARCO, Inc	2,146
Safeway Inc	1,960
U.S. Border Patrol	1,808
Fry's Food and Drug Stores	1,750
IBM Storage Systems Division	1,700
Arizona Air National Guard	1,447
Convergys Corp.	1,433
Southern Arizona VA Health Care System	1,283
Texas Instruments (Burr-Brown Corporation)	1,278
Walgreen Drug Company	1,266

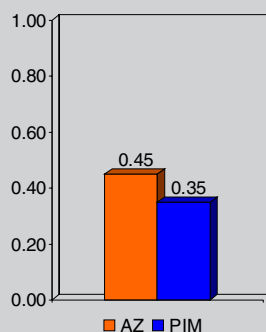
Sources: The Arizona Daily Star, March 2002 & 2002 Guide to Military Installations Worldwide

Public

Federal	9,142
State	26,882
Local	41,413

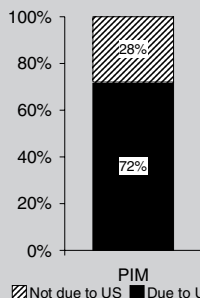
2001

INDUSTRIAL DIVERSITY

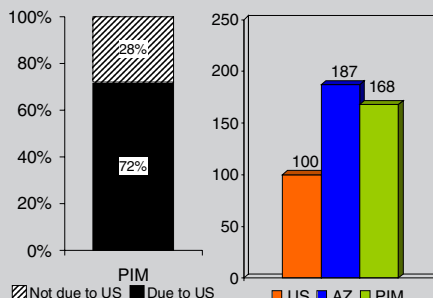


EMPLOYMENT VOLATILITY

DUE TO U.S. FLUCTUATIONS



RELATIVE TO U.S.



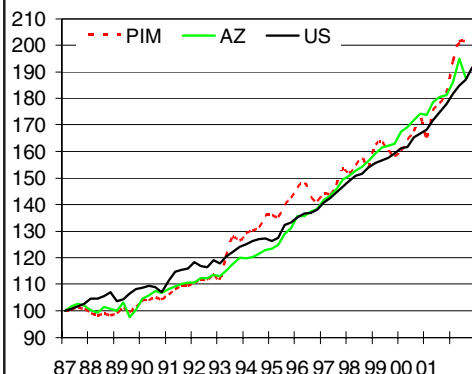
COMPARATIVE EMPLOYMENT AND INCOME

% of Total Employment

Sector	PIM	AZ	US	PIM	AZ	US
Mining	0.5%	0.4%	0.4%	\$21,956	\$42,760	\$64,853
Construction	6.3%	7.3%	5.1%	\$34,901	\$35,534	\$37,846
Manufacturing	9.7%	9.3%	13.4%	\$47,105	\$52,820	\$50,161
Durable	87.2%	77.2%	60.1%	\$49,046	\$56,574	\$52,419
Nondurable	12.8%	22.8%	39.9%	\$35,432	\$40,158	\$46,703
Transport/Utilities	3.3%	4.9%	5.4%	\$44,271	\$42,761	\$50,161
Wholesale Trade	2.9%	4.9%	5.1%	\$34,240	\$47,228	\$49,721
Retail Trade	17.6%	18.6%	17.8%	\$18,329	\$19,835	\$19,357
Finance, Ins., Real Estate	4.2%	6.6%	5.8%	\$33,335	\$31,403	\$42,743
Services	33.3%	31.3%	31.1%	\$29,575	\$30,334	\$33,327
Memo: Health Services	7.8%	6.8%	7.9%	\$38,779	\$41,149	\$40,060
Government	22.1%	16.6%	15.9%	\$28,000	\$38,727	\$41,557

Source: Percent of total employment - BLS, 2001; Avg annual earnings - BEA, 2000; Economy.com

HOUSE PRICES



Source: NAR, Economy.com, 1987Q1 = 100, NSA

LEADING INDUSTRIES

SIC	Industry	Employees (000)
GVSL	Total state and local government	68.3
581	Eating & drinking places	24.8
736	Personnel supply services	12.5
ML	Military personnel	10.0
376	Guided missiles, space vehicles, part	9.2
GVF	Total federal government - civilian	9.1
701	Hotels and motels	7.2
737	Computer and data processing services	7.1
874	Management and public relations	6.9
801	Offices & clinics of medical doctors	6.7
381	Search and navigation equipment	6.5
738	Misc business services	5.8
799	Misc amusement & recreational service	5.2
PH	Private household workers	4.5
832	Individual and family services	4.4

Total leading industry employment 267.5

High-tech employment 17.6
As % of total employment, all industries 4.8

Source: BLS, Economy.com, 2001

MIGRATION FLOWS

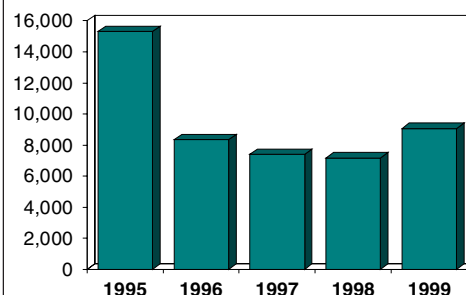
Into Pima County	Number of Migrants	Median Income
Maricopa County	3,876	22,386
Cochise County	1,436	18,406
Chicago	995	36,009
Los Angeles	966	21,527
Santa Cruz County	952	18,244
San Diego	842	25,302
Pinal County	834	21,666
Seattle	720	37,285
Denver	683	38,328
Riverside	553	21,922
Total Immigration	42,674	24,058

From Pima County

Maricopa County	5,570	23,696
Cochise County	1,172	20,132
San Diego	1,002	22,390
Los Angeles	841	20,535
Pinal County	749	22,371
Las Vegas (NV part only)	738	24,211
Santa Cruz County	652	17,867
Washington	611	30,909
Denver	597	29,329
Seattle	509	27,403
Total Outmigration	37,771	23,522

Net Migration	4,903	536
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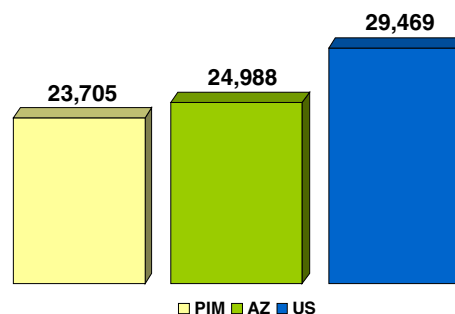
Net Migration, PIM



	Domestic	Foreign	Total
1995	13,064	2,257	15,321
1996	5,896	2,446	8,342
1997	4,692	2,698	7,390
1998	4,762	2,395	7,157
1999	6,773	2,291	9,064

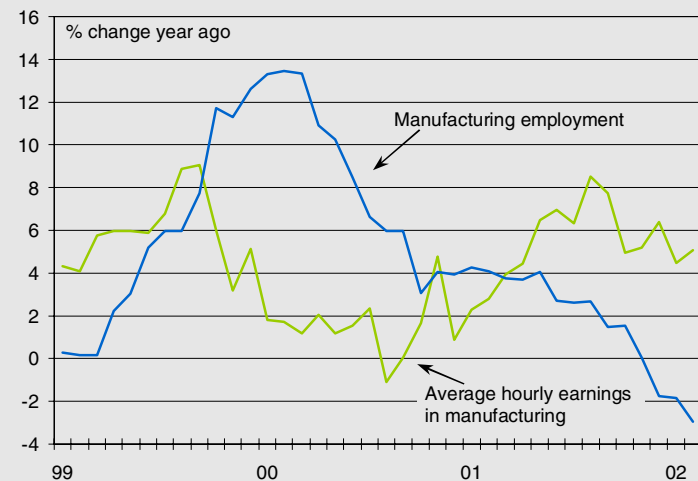
Source: IRS (top), 2001; Census Bureau, 1999

PER CAPITA INCOME



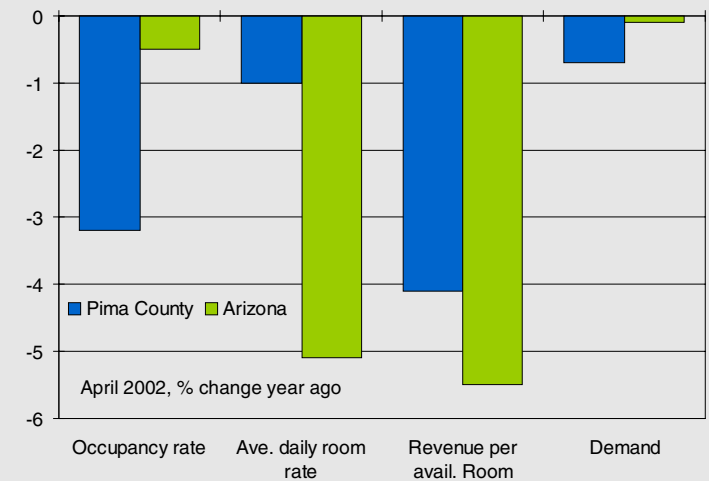
Source: Bureau of Economic Analysis, 2000

Earnings Growth Holding Up Amid Manufacturing Weakness



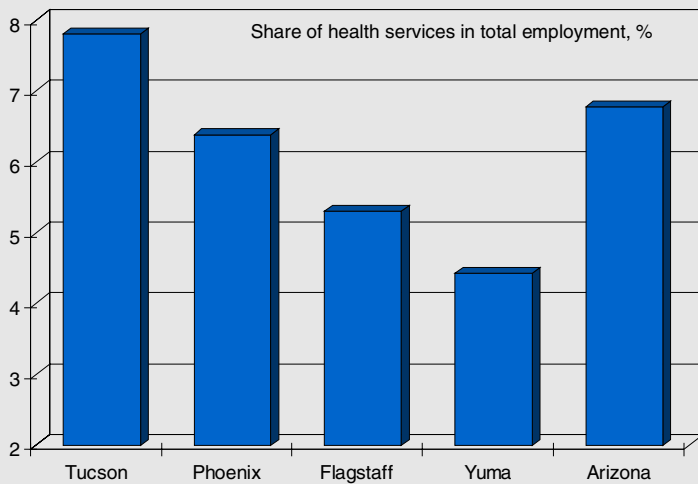
On the manufacturing front, while PIM continues to shed jobs, the outlook for the industry has become more positive. One of the first signs of improved conditions in PIM's manufacturing industry is buoyancy in average earnings growth, even as job losses continue. Average hourly earnings in PIM's high-value added defense manufacturing industry is growing at a steady clip as employers boost production by paying existing employees overtime rather than boosting hiring. Economy.com forecasts that positive year-over-year growth in manufacturing should occur early next year. As a result, the use of overtime will likely moderate as job growth picks up.

Tourism Improving in PIM, but Not by Much



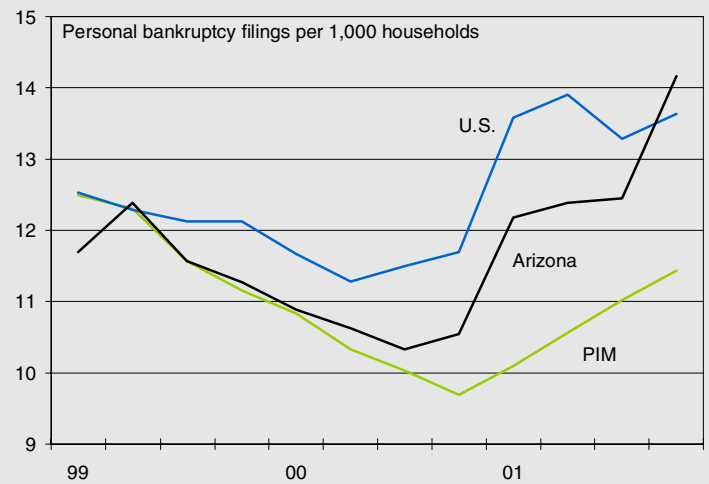
Although the tourism industry in PIM is slowly climbing out of its slump, it still has a ways to go before it returns to normal levels. Winter tourism, typically an important contributor to growth in the first quarter, has been weak thus far; all travel indicators are down from last year, and there seems little end in sight. Indeed, the weak winter tourism season is prolonging what turned out to be one of the worst years for PIM's hotel industry. That said, most of the pain is being felt by the upper-end sites. Pent-up demand and a return to the perception that air travel is safe among the nation's tourists will help boost summer tourism in PIM.

PIM Is the Healthcare Leader in Arizona



With respect to health service employment, the PIM metro area is the healthcare capital of the state. The region has three health systems/hospitals among its top 10 employers, and much of the strength in the local health services segment is based out of the University of Arizona, a major teaching and research university in the life sciences arena. As a result, PIM will be a natural complement to the Arizona Biotechnology and Biomedicine Institute, a venture between the state's three major state universities, which aims to enhance life science research done in the state.

Household Balance Sheets Holding Steady in PIM

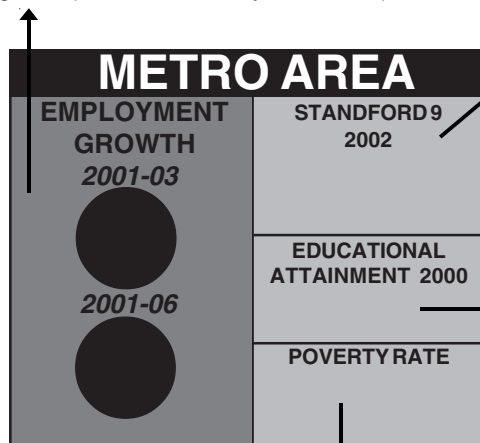


Despite rising unemployment, income growth in PIM has held up for the most part, as elsewhere in the nation. Bankruptcy filings have risen, but per 1,000 households, remaining well below the national and state averages, demonstrating underlying strength in household balance sheets in PIM. A significant university, military and health services presence in the area has lent a degree of stability to the region. Steady credit conditions bode well for an imminent economic recovery and are particularly positive for the consumer-spending outlook in the metro area.

USER'S GUIDE

Educational Growth

These numbers represent the county's annualized employment growth rate in its short-term (over the next two years, top) and its long-term growth (over the next five years, bottom).



Poverty Rate

This data point reflects the share of total population in the county that lives below the Federal Poverty Line. This is 1999 data, released by the Census bureau based on the Decennial Census 2000 surveys. The Census Bureau uses a set of money income thresholds that vary by family size and composition to detect who is poor. If the total income for a family or unrelated individual falls below the relevant poverty threshold, then the family or unrelated individual is classified as being "below the poverty level."

Standford 9

The data represent percentile ranks for the county's 9th grade students, released in Spring 2002. Stanford 9 tests are a commonly used measure of educational attainment for K-12 students. The test is a standardized one that compares individual students' performance in each of the subject areas with a representative sample of national public school students.

Educational Attainment

This value represents the share of the county's residents aged 25 and over who have attained a bachelor's degree or higher. This is taken from data released by the Census Bureau based on the Decennial Census 2000 surveys.

Industry Opportunities

Future opportunities for economic development include a mix of those industries that already drive the state's economy, and others in which their roles may be enhanced. A three-step process led to the creation of priority economic opportunities. First, Economy.com's forecasts of industry employment over the coming ten years was used to provide a rank of growth rates across all two-digit industries as defined by SIC codes.

Second, Economy.com conducted econometric analysis of the comparative advantages that contribute to the determination of industry location, using this to calculate the estimated growth potential by industry in Arizona. This was then compared with actual industry performance over the past ten years, and the difference provided a ranking of industries in which full potential is not yet realized given current measures of comparative advantage.

The rankings emerging from this analysis were then combined with the ranking of industries according to the national outlook by industry, weighting these two factors equally. Finally, from the ranking of industries that emerged from these criteria, industries were selected that had qualities fundamental to the assumptions of the changing macro and international economic environment.

Population by cohort and population distribution

These two charts use population data for 1990 and 2000 released by the Census Bureau as part of its Decennial Census surveys. The first chart contrasts the actual number, in thousands, of residents in the county by age cohort, while the second chart details the share of residents in each age cohort.

Indicator	Units	Source	Note
Gross Product	Chain-weighted dollars	Economy.com	GCP is the sum of all income produced in a county, including corporate profits. Thus, it does not necessarily track employment growth.
Total Employment	Thousands	BLS 790 employment series; for NECMAs series estimated by Economy.com	Defined as sum of mining, construction, manufacturing, transportation/public utilities, wholesale/retail trade, finance/real estate, services, and government.
Unemployment Rate	Percent	Household employment series	
Personal Income Growth	% change previous year	Bureau of Economic Analysis	Measures income received by households from employment (including self), investments, and transfer payments.
Population	Thousands	Bureau of Census	
Single-Family Permits	Number of units	Bureau of Census	
Multifamily Permits	Number of units	Bureau of Census	
Existing Home Price	Thousands dollars	Nat'l Assoc Realtors	Index is affected by mix of homes sold.
Mortgage Originations	Millions dollars	Federal Financial Institutions Council	
Net Migration	Thousands	Bureau of Census	Calculated as number of domestic and international people moving into a state minus those leaving.
Personal Bankruptcies	Number of household filings	Admin. Office U.S. Courts	

USER'S GUIDE

EMPLOYMENT AND INDUSTRY STRUCTURE

INDUSTRIAL DIVERSITY

Industrial diversity is defined as the extent to which a county's industrial structure approximates the U.S. industrial structure.

Diversity is derived using the following formula:
$$\text{Diversity} = 1/\sum((\text{EMP}_{ij}/\text{EMP}_{USj}) * \text{EMP}_{ij})$$

Where EMP = share of employment in three-digit SIC industry j during period 2000-01; i = COUNTY; US = U.S. The Diversity measure is bounded between 0 and 1. 1 means the county has the same industrial structure as the U.S.; 0 means it has a totally different industrial structure than the U.S.

Formula derived from Hachman index, Bureau of Business and Economic Research, Univ. of Utah, December 1994.

EMPLOYMENT VOLATILITY

Employment volatility is defined as the standard deviation in a county's monthly year-over-year percentage nonagricultural employment growth relative to the standard deviation in U.S. year-over-year percentage nonagricultural employment growth over the 1992 to 2001 period. Volatility of 100 means that employment volatility in a county is equal to employment volatility in the nation. Counties tend to be inherently more volatile than states.

EMPLOYMENT VOLATILITY DUE TO U.S. FLUCTUATIONS

Volatility due to U.S. fluctuations (also known as "systematic volatility") is defined as:
$$\text{SYSVOL} = (R_2)^{1/2}$$

where SYSVOL = systematic volatility; R_2 = is the proportion of total variance in county i's growth rate that is associated with contemporaneous fluctuations in national growth.

Volatility not due to U.S. fluctuations (also known as "nonsystematic volatility") is defined as:
$$\text{NONSYS} = 1 - (R_2)^{1/2}$$

where NONSYS = nonsystematic volatility in county i; R_2 is the proportion of total variance in county i's growth rate that is associated with contemporaneous fluctuations in national growth.

Formulas modified from "Assessing Regional Economic Stability: A Portfolio Approach," Economic Review (Federal Reserve Bank of San Francisco), Winter 1990.

MIGRATION FLOWS

IRS data. When a taxpayer notifies the IRS of a change in address, the IRS records the household's current county of residence, the county to which the household is moving, the number of household members, and household income. Economy.com aggregates this data by metro area into gross migration. The data are then sorted to show the ten counties providing the largest number of new residents and the ten counties to where the largest number of current residents move. Subtracting the gross out-migration flows from the gross in-migration flows gives net out-migration.

The IRS migration data have several advantages. One advantage of the IRS data is that it is the only migration data set to show where out-migrants are moving to and where in-migrants are coming from. Another advantage is that the average income levels can be associated with both in-migrants and out-migrants. The disadvantages of the IRS migration data are that it only covers households that have filed income-tax returns and thus is not a complete record of all migration; and that it lags by two to two-and-one half years.

Census data. The Census measure of net migration attempts to capture all migration to and from counties. Economy.com aggregates this data to metro areas and to states. The Census measure of net migration differs from the IRS measure in several ways. First, Census measures only net migration; gross in and out flows are not available. Second, Census data cover all migrants, including international migrants, not just those who file income tax returns. Census data lack accompanying income data. Numbers differ from migration series data in indicator tables, which are estimated on Census 2000 data. New migration data from the Census will be available in 2002.

HOUSE PRICES

The house price index presents relative growth in the median price for existing single family homes, indexed to the first quarter of 1987. The median home price data comes from the National Association of Realtors, and is estimated at the county level by Economy.com. Each month the NAR Research Division receives data on existing single-family home sales from over 650 Boards/Associations of Realtors and multiple listing systems across the country. In 1994, data on over 1,500,000 existing single-family homes were received and processed.

LEADING INDUSTRIES

Leading industries are defined as the largest industries with location quotients greater than 1.1. A location quotient greater than 1 indicates an industry that serves more than the local market. Location quotients are calculated according to the formula: $\text{LC}_{im} = (\text{E}_{im}/\text{E}_{tm})/(\text{E}_{iUS}/\text{E}_{tUS})$ where LC = location quotient in county m for industry i; E = employment in industry i for county m or the U.S.; and t = total employment for county m or the U.S.

Economy.com defines high-tech employment as the sum of employment in the following industries:

SIC	Industry
283	Pharmaceuticals
357	Computer & Office Equipment
366	Communications Equipment
367	Electronic Components & Accessories
381	Search & Navigation Equipment
382	Measuring & Controlling Devices
384	Medical Instruments & Supplies
385	Ophthalmic Goods
489	Communications Services, NEC
737	Computer & Data Processing Services
873	Research & Testing Services

Prepared for the Arizona Department of Commerce
Office of Economic Information and Research
December 2002